

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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PCT/JP2003/002713



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Applicant's or agent's file reference P02-0034PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP2003/002713	International filing date (day/month/year) 07 March 2003 (07.03.2003)	Priority date (day/month/year) 08 March 2002 (08.03.2002)
International Patent Classification (IPC) or national classification and IPC B82B 3/00, C25B 3/00, H01L 21/3205, 29/06, 29/66, 29/786, 51/00		
Applicant COMMUNICATIONS RESEARCH LABORATORY, INDEPENDENT ADMINISTRATIVE INSTITUTION		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet. <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT). These annexes consist of a total of <u>19</u> sheets.
3. This report contains indications relating to the following items: I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input checked="" type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application

Date of submission of the demand 16 July 2003 (16.07.2003)	Date of completion of this report 11 May 2004 (11.05.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

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International application No.

PCT/JP2003/002713

I. Basis of the report

1. With regard to the elements of the international application:*

- ☐ the international application as originally filed
- ☒ the description:
pages 8-23, as originally filed
pages _____, filed with the demand
pages 1,2,2/1,3,4,4/1,5,5/1,6,6/1,7,7/1, filed with the letter of 09 January 2004 (09.01.2004)
- ☒ the claims:
pages 4, as originally filed
pages _____, as amended (together with any statement under Article 19
pages _____, filed with the demand
pages 1-3, 5-22, filed with the letter of 09 January 2004 (09.01.2004)
- ☒ the drawings:
pages 1/25-25/25, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
pages _____, as originally filed
pages _____, filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

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III. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

1. The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application.
- ☒ claims Nos. 13

because:

- ☐ the said international application, or the said claims Nos. _____
relate to the following subject matter which does not require an international preliminary examination (*specify*):

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. _____
are so unclear that no meaningful opinion could be formed (*specify*):

- ☒ the claims, or said claims Nos. 13 are so inadequately supported
by the description that no meaningful opinion could be formed.

- ☐ no international search report has been established for said claims Nos. _____.

2. A meaningful international preliminary examination cannot be carried out due to the failure of the nucleotide and/or amino acid sequence listing to comply with the standard provided for in Annex C of the Administrative Instructions:

- ☐ the written form has not been furnished or does not comply with the standard.
- ☐ the computer readable form has not been furnished or does not comply with the standard.

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IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

1. Claims 1-10 and 14-22

The subject matters of the above claims relate to an electrolytic device composed of two electrodes provided on a board. (Invention group 1)

2. Claims 11-13

The subject matters of the above claims relate to conductive nano-wire. (Invention group 2)

The above-mentioned invention groups 1 and 2 do not have a special technical feature as provided in PCT Rule 13.2 between them.

Accordingly, the above-mentioned invention groups 1 and 2 do not satisfy the requirement of unity of invention.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. Statement**

Novelty (N)	Claims	1-10, 14-22	YES
	Claims	11, 12	NO
Inventive step (IS)	Claims	1-10, 14-19	YES
	Claims	11, 12, 20-22	NO
Industrial applicability (IA)	Claims	1-12, 14-22	YES
	Claims		NO

2. Citations and explanations

Document 1: Proceedings of General Meeting for Discussion on Molecular Structures, (Yoko Tatewaki, et al.), 24 September, 2001 (24.09.01), Vol. 2001, page 371

Document 2: WO, 93-25003, A1 (Yale University), 9 December, 1993 (09.12.93)

Document 3: WO, 93-22480, A1 (ISIS Innovation, Ltd.), 11 November, 1993 (11.11.93)

Claims 1-10 and 14-19

The following technical matter is neither described in any of the documents cited in the ISR, nor obvious.

"A technology of manufacturing conductive nano-wire of a linear substance made of molecules orderly arrayed, of width of one molecule to 1 μ m and of length of two or more molecules, between two electrodes with only a very narrow gap in between by forming an electric field gradient between the said electrodes"

Claims 11 and 12

The subject matters of claims 11 and 12 do not appear to be novel or to involve an inventive step in view of document 1 newly cited.

Document 1 describes nano-wire composed of a charge transfer complex of a TTF derivative. It also suggests that the said nano-wire has conductivity.

Claims 20-22

The subject matters of claims 20-22 do not appear to involve an inventive step in view of documents 1 and 2 cited in the ISR.

Document 1 describes a method for manufacturing electronic circuits by providing groups of conductive molecules each in an extremely narrow gap.

Document 2 discloses a method of forming an extremely small structure by means of electrolysis by applying voltage to any position on a board.

A person skilled in the art could have easily applied the method of forming an extremely small structure described in document 2 to the method of manufacturing electronic circuits described in document 1.

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Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

Continuation of : V

The subject matter of claim 13 relates to conductive nano-wire having a conductivity of 1 Scm^{-1} or more. The specification of the present application however does not contain any concrete description of conductive nano-wire having such a high conductivity.